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10/046,200	01/16/2002	John O. Lamping	108759	3057

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EXAMINER	
MITCHELL, JASON D	
ART UNIT	**PAPER NUMBER**
2193	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/046,200	LAMPING, JOHN O.	
	Examiner	Art Unit	
	Jason Mitchell	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application..

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to papers filed on 03-04-2005.

2. Per Applicant's request, claims 1 and 7 have been amended. Claims 1-8 are pending in this case.

Response to Arguments

In the paragraph bridging pgs. 9 and 10, of the response filed on 3/4/05, Applicant states:

> However, the preamble of claim 1 recites "a method for simplifying a programming element that is compliable into instructions for operating a data processing device," and therefore the tangible medium is the data processing device.

3. **Applicant's arguments been fully considered but they are not persuasive.** Respectfully, it is Examiner's position that while a data processing device would constitute a tangible medium, the language of the claim is not actually directed to the 'data processing device', but instead is directed to a 'method for simplifying a programming element'. This 'programming element' has the ability to become tangible (i.e. compiled into instructions running on a data processing device), but is not tangible in and of it's self.

4. **Accordingly the 101 rejection of claims 1, and 3-6 are maintained.**

In the second paragraph of pg. 11, Applicant states:

> However, the "modifier" of Biggerstaff does not match any of the definitional descriptions of the propagator of the specification.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., 'descriptions of the propagator of the specification') are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). While Examiner appreciates Applicant's attempt to include the opinion found in Home Diagnostic, Inc. v. Life Scan, Inc., Appeal No. 03-1370, the language of the claims fails to clearly and concisely distinguish them from the prior art.

5. However, **Applicant's arguments with respect to the 102(e) rejection of independent claims 1, 7 and 8 and dependent claims 2-6, have been considered but are moot in view of the new ground(s) of rejection.**

Drawings

6. Applicant's amended drawing sheets and amendments to the specification were sufficient to over come the objections, which have consequently been withdrawn.

Specification

Applicant's amendments to the specification were sufficient to overcome the objection, which has consequently been withdrawn.

Claim Rejections - 35 USC § 112

7. Applicant's amendments to the claims were sufficient to overcome the rejection, which has consequently been withdrawn.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 and 3-6 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 1 recites a method for simplifying a programming element, comprising the steps of, simplifying the programming element to create a current stage, determining at least one propagator for that current stage, associating at least one projection with the programming element and simplifying the current stage to create a next stage, and does not include embodiment in a tangible medium such as a computer or computer readable medium. Further, dependant claims 3-6 also fail to provide a technological embodiment for the invention. Therefore the claims only recite functional descriptive material and consequently nonstatutory subject matter.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been

obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,745,384 to Biggerstaff (Biggerstaff) in view of "Aspect-oriented Requirements Engineering for Component-based Software Systems" by Grundy (Grundy).

11. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,745,384 to Biggerstaff (Biggerstaff).

Regarding Claim 1: Biggerstaff discloses a method for simplifying a programming element that is compliable into instructions for operating a data processing device, the programming element having at least one part, comprising: simplifying the programming element until all of the at least one part of the programming element reaches a first stage to create at least on part of a current stage simplified programming element (col. 9, lines 25-29 'Inline Functions component'); determining at least one propagator for the current stage simplified programming element, (col. 7, lines 13-16 'allows a programmer to define various transforms for transforming an IP tree ... into a tree that facilitates the implementation of various optimizations'); associating at least one projection with the current stage simplified programming element using the at least one determined propagator (col. 6, lines 11-14 'These transformations may ... add property tag adornments'); simplifying the current stage simplified programming element, based at least in part on the current stage simplified programming element and the associated projections (col. 6, lines 28-35 'col. 6, lines 11-14

'adornments that anticipate how those expressions might be implemented'), until all of the at least one part of the current stage simplified programming element reaches a next stage to create a next stage simplified programming element (col. 6, lines 39-46 'Once this ... loop merging is complete, the optimized code for the loops is generated').

Biggerstaff does not explicitly disclose the propagator being described in the programming element, but does disclose the propagator is defined by a developer (col. 7, lines 13-16 'allows a programmer to define various transforms').

Yyy discloses a method of describing the propagator in the programming element (pg. 6, col. 2, par. 2 'Aspect information can be encoded in component implementations'), in an analogous art for the purpose of providing an application with information regarding possible aspects (pg. 6, col. 2, par. 2 'Components my query other components for the aspects they provide or require').

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the method taught in Yyy for describing the propagator (pg. 6, col. 2, par. 2) to allow the programmer disclosed in Biggerstaff (col. 7, lines 13-16) to describe the propagator because one of ordinary skill in the art would have been motivated to provide a method to allow the developer to define this information (Biggerstaff col. 7, lines 13-16 'allows a programmer to define various transforms').

Regarding Claim 2: The rejection of claim 1 is incorporated; further, Biggerstaff discloses compiling each stage obtained from the programming element into at

least a portion of the instructions for operating the data processing device (col. 6, lines 39-46 'the optimized code for the loops is generated').

Regarding Claim 3: The rejection of claim 1 is incorporated; further Biggerstaff discloses repeating the determining, associating and current stage simplifying steps using the next stage simplified programming element as the current stage simplified programming element (col. 6, lines 39-46 'Then the composite folding phase operates on the body of the resultant loops').

Regarding Claim 4: The rejection of claim 3 is incorporated; further Biggerstaff discloses repeating the determining, associating and current stage simplifying steps until the next stage simplified programming element is a final stage of the programming element (col. 6, lines 39-46 'Then the composite folding phase operates on the body of the resultant loops to simplify, rewrite, reorganize and merge').

Regarding Claim 5: The rejection of claim 1 is incorporated; further Biggerstaff discloses using the at least one determined propagator to decorate the current stage simplified programming element with the at least one projection (col. 6, lines 11-14 'These transformations may ... add property tag adornments').

Regarding Claim 6: The rejection of claim 1 is incorporated; further Biggerstaff discloses each simplified programming element has at least one significance (col. 6, lines 8-11 'individual transformations'). Biggerstaff further discloses determining whether, for each of the at least one part of the current simplified programming element, that part of the current simplified programming element should be reduced (col. 6, lines 8-11 'transformations are triggered by the ...

operators and operands at each subtree') so that the next stage simplified programming element properly denotes the at least one significance of that part of the current simplified programming element in the next stage simplified programming element (col. 6, lines 7-8 'distinct recursive walks of the abstract syntax tree').

Regarding Claim 7: Biggerstaff discloses a method for executing a computation on a data processing device described as a plurality of language constructs (col. 49, lines 36-41 'the resulting loops are woven together into a series of terms'), comprising: determining at least on propagator for the computation, the propagator included in the language constructions (col. 7, lines 13-16 'allows a programmer to define various transforms for transforming an IP tree ... into a tree that facilitates the implementation of various optimizations'); generating a projection on the computation, the projection specifying a second computation (col. 49, lines 36-41 'the common index expressions'); executing the computation until a portion of the computation using the propagator that is conditional on a result of the projection is reached (col. 49, lines 36-41 'those terms simplified via partial evaluation'); simplifying the language constructs describing the computation sufficiently to allow the second computation specified by the projection to be executed (col. 49, lines 36-41 'the common index expressions within those terms are replaced with temporary variables'); executing the second computation to obtain the result for the projection (col. 49, lines 36-41 'whose values are computed'); and continuing the execution of the computation based

on the obtained result for the projection (col. 49, lines 36-41 're-computation of the index expressions').

Regarding Claim 8: Biggerstaff discloses a method for converting a programming element into a plurality of woven code blocks the woven code blocks compliable into instructions for operating a data processing device, comprising:

(a) identifying at least one common process (col. 6, lines 27-28 'loop merging') in the programming element;

(b) reducing the programming element to at least one significance based on the identified at least one common process (col. 6, lines 8-11 'individual transformations are triggered');

(c) incorporating the at least one significance into a first woven code block (col. 6, lines 39-42 'optimized code ... is generated');

(d) determining zero, one or more of the incorporated significances that are susceptible to updating in subsequent steps of the method (col. 8, lines 31-34 'the subtree will be flagged');

(e) invoking a propagator, based upon results of the determination (col. 6, lines 8-11 'individual transformations are triggered'), usable to perform any desired updates on the determined susceptible significances of the first woven code block (col. 6, lines 11-13 'These transformations may ... transform one abstraction'); repeating steps (a)-(e) at least once to create a subsequent woven code block based on the immediately previously created woven code block (col.

6, lines 39-46 'code for the loops is generated ... Then the composite folding phase operates on the ... loops'), further comprising:

(f) communicating with the propagator of at least one previously created woven code block to determine if any significances of that at least one previously created woven code block are common to the subsequent woven code block (col. 8, lines 31-34 'the subtree will be flagged); and

(g) updating any significances in at least one of the subsequent woven code block and at least one previously created woven code block (col. 8, lines 31-34 'scheduled for further transformation') that are common to the subsequent woven code block and that at least one previously created woven code block (col. 6, lines 39-46 'code for the loops is generated ... Then the composite folding phase operates on the ... loops').

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
6/10/05

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